Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A packet optimization method comprising:

generating a metric to indicate a channel condition based on an estimated error rate;

processing the metric to determine optimal packet-size for the channel condition; and

choosing the optimal packet-size corresponding to the processed metric to send to a requestor.

2. (original) The packet optimization method of claim 1, wherein processing further includes:

receiving the metric corresponding to the channel condition; and

using the received metric to balance a trade-off between the cyclic redundancy check and re-transmission overhead.

3. (original) The packet optimization method of claim 1, wherein choosing the optimal packet further includes training a neural network or look-up table to optimally improve system data throughput by selecting a packet corresponding to the channel condition.

4. (currently amended) The packet optimization method of claim 1, wherein the optimal packet-size is ~~being~~ a packet-size that minimizes both cyclic redundancy check and re-transmission overhead.

5. (currently amended) The packet optimization method of claim 1, wherein the ~~metric being a frame error rate~~ estimated error rate is a weighted combination of a frame error rate (FER), a signal to noise ratio (SNR) estimate, an energy per bit (Eb)/ thermal noise (Nt) estimate, and a system time or finger time drift rate.

6. (currently amended) The packet optimization method of claim 1, wherein the estimated error rate is ~~metric being a function of a packet error rate~~ selected from a group consisting of frame error rate (FER), signal to noise ratio estimate (SNR), energy per bit (Eb) / Thermal noise (Nt) estimate, and system time or finger time drift rate.

7. (currently amended) An apparatus comprising:

a memory to store a metric and packet; and

a processor to generate a metric indicating a channel condition based on an estimated error rate, to process the metric to determine optimal packet-size for the channel condition, and to choose the optimal packet-size corresponding to the processed metric to send to a requestor.

8. (currently amended) The apparatus of claim 7, wherein the processor receives ~~is to receive~~ the metric corresponding to the channel condition, and use the received metric to balance trade-off between the cyclic redundancy check and re-transmission overhead.

9. (currently amended) The apparatus of claim 7, wherein the processor trains ~~is to train~~ a neural network or look-up table to optimally improve system data throughput by selecting a packet corresponding to the channel condition.

10. (currently amended) The apparatus of claim 7, wherein the processor chooses ~~is to choose~~ an optimal packet-size that minimizes both cyclic redundancy check and re-transmission overhead.

11. (currently amended) The apparatus of claim 7, wherein the processor ~~is to~~ computes ~~use~~ the estimated error rate ~~metric corresponding to frame error rate~~ as a weighted combination of a frame error rate (FEF), a signal to noise ratio (SNR) estimate, an energy per bit (Eb)/ thermal noise (Nt) estimate, and a system time or finger time drift rate.

12. (currently amended) The apparatus of claim 7, wherein the estimated error rate is one of a ~~metric being a function of a packet error rate selected from a group consisting of~~ frame

error rate (FER), a signal to noise ratio estimate (SNR), an energy per bit (Eb) / Thermal noise (Nt) estimate, and a system time or finger time drift rate.

13. (currently amended) A storage medium having stored therein a plurality of machine executable instructions, wherein when executed, the instructions performing operations ~~perform a method~~ comprising:

generating a metric to indicate a channel condition based on an estimated error rate;

processing the metric to determine optimal packet-size for the channel condition; and

choosing the optimal packet-size corresponding to the processed metric to send to a requestor.

14. (currently amended) The storage medium of claim 13, wherein the instructions performing processing the metric comprises instructions, when executed, performing operations comprising ~~processing further includes~~:

receiving the metric corresponding to the channel condition; and

using the received metric to balance trade-off between the cyclic redundancy check and re-transmission overhead.

15. (currently amended) The storage medium of claim 13, wherein the instructions performing choosing the optimal packet comprises instructions, when executed, performing operations comprising ~~further includes~~ training a neural network or look-up table to optimally improve system data throughput by selecting a packet corresponding to the channel condition.

16. (currently amended) A method of preventing system overload in a base station or mobile data transmission system comprising:

estimating likelihood of packet transmission error in a system;

determining a radio link protocol (RLP) packet-size corresponding to the estimated likelihood of packet transmission error; and

sending a ~~the~~ RLP packet having size corresponding to the RLP packet-size to a base station or mobile data transmission system.

17. (currently amended) The method of claim 16, wherein determining the RLP packet-size further includes:

allowing a base station or mobile data transmission system to request a change for the RLP packet-size; and

selecting the [[a]] RLP packet from a predetermined table that corresponds in size to the size requested by the base station or mobile data transmission system.; and

~~sending the selected RLP packet to the base station or mobile data transmission system.~~

18. (currently amended) The method of claim 17, wherein the base station or mobile data transmission request is ~~being~~ limited to a predetermined number of requests.

19. (currently amended) An apparatus comprising:

a memory to store ~~an~~ RLP packets ~~packet~~; and

a processor to estimate likelihood of packet transmission error in a system, to determine a radio link protocol (RLP) packet-size corresponding to the estimated likelihood of packet transmission error, and to send a ~~the~~ RLP packet having size corresponding to the RLP packet-size to a base station or mobile data transmission system.

20. (currently amended) The apparatus of claim 19, wherein the processor allows ~~is to allow~~ a base station or mobile data transmission system to request a change for the RLP packet-size, and selects the ~~to select~~ [[a]] RLP packet from a predetermined table that corresponds in size to the size requested by the base station or mobile data transmission system~~, and to send the selected RLP packet to the base station or mobile data transmission system~~.

21. (currently amended) The apparatus of claim 20, wherein the processor limits ~~is to limit~~ the request from the base station or mobile data transmission to a predetermined number of requests.

22. (currently amended) A storage medium having stored therein a plurality of machine executable instructions, wherein when executed, the instructions performing operations ~~perform a method~~ comprising:

estimating likelihood of packet transmission error in a system;

determining a radio link protocol (RLP) packet-size corresponding to the estimated likelihood of packet transmission error; and

sending a ~~the~~ RLP packet having size corresponding to the RLP packet-size to a base station or mobile data transmission system.

23. (currently amended) The storage medium of claim 22, wherein the instructions performing determining the RLP packet-size comprises instructions, when executed, performing operations comprising ~~further includes~~:

allowing a base station or mobile data transmission system to request a change for the RLP packet-size; and

selecting the [[a]] RLP packet from a predetermined table that corresponds in size to the size requested by the base station or mobile data transmission system.; ~~and~~

~~sending the selected RLP packet to the base station or mobile data transmission system.~~

24. (currently amended) The storage medium of claim [[22]] 23, wherein the base station or mobile data transmission system is ~~request being~~ limited to a predetermined number of requests.

25. (original) A method of optimizing packet-size comprising:

storing at least one radio link protocol (RLP) packet in a physical layer; and

predetermining the RLP packet-size by empirical experimentation.

26. (currently amended) The method of claim 25, wherein pre-determining the RLP packet-size comprises: ~~the empirical experimentation includes~~

simulating a condition with a particular metric value;

adjusting packet-size manually corresponding to the metric value; and

recording packet-size data for the metric value to obtain maximum system throughput.

27. (currently amended) The method of claim 25, wherein the predetermining comprises ~~further includes~~ storing a metric value in a lookup table and obtaining an optimum packet-size corresponding to the stored metric value.

28. (original) The method of claim 25, wherein the RLP packet includes cyclic redundancy check bits to provide error-checking capability for the RLP packet.

29. (currently amended) An apparatus comprising:

a memory to store an radio link protocol (RLP) packet, and data from an empirical experimentation ~~data;~~ and

a processor to store at least one RLP packet in a physical layer, and to predetermine the RLP packet-size by the empirical experimentation.

30. (currently amended) The apparatus of claim 29, wherein the processor to perform the empirical experimentation simulates ~~is to simulate~~ a condition with a particular metric value, adjusts ~~to adjust~~ packet-size manually corresponding to the metric value, and records ~~to record~~ packet-size data for the metric value for obtaining maximum system throughput.

31. (currently amended) The apparatus of claim 29, wherein the processor stores ~~is to store~~ a metric value in a lookup table and obtains ~~is to obtain~~ an optimum packet-size corresponding to the stored metric value.

32. (original) The apparatus of claim 29, wherein the RLP packet includes cyclic redundancy check bits to provide error-checking capability for the RLP packet.

33. (currently amended) A storage medium having stored therein a plurality of machine executable instructions, wherein when executed, the instructions perform operations ~~a method~~ comprising:

storing at least one radio link protocol (RLP) packet in a physical layer; and

predetermining the RLP packet-size by an empirical experimentation.

34. (currently amended) The storage medium of claim 33, wherein the instructions performing predetermining the RLP packet-size comprises instructions, when executed, performing operations comprising: ~~empirical experimentation includes~~

simulating a condition with a particular metric value;

adjusting packet-size manually corresponding to the metric value; and

recording packet-size data for the metric value to get maximum system throughput.

35. (currently amended) The storage medium of claim 33, wherein the instructions performing predetermining the RLP packet-size comprises instructions, when executed, performing operations comprising ~~predetermining further includes~~ storing a metric value in a lookup table and obtaining an optimum packet-size corresponding to the stored metric value.

36. (original) The storage medium of claim 33, wherein the RLP packet includes cyclic redundancy check bits to provide error-checking capability for the RLP packet.